Health Information Technology And Quality Improvement For Community Health Centers

At stake are improved care and outcomes for the most vulnerable U.S. populations; federal leadership and investment are needed.

by Kevin Fiscella and H. Jack Geiger

ABSTRACT: The U.S. Department of Health and Human Services (HHS) is committed to promoting health information technology (HIT) throughout health care. However, selection, acquisition, and implementation of HIT for quality improvement (QI) are beyond the means of many federally supported community health centers (CHCs). In the absence of federal leadership and investment, adoption of HIT will be slow, haphazard, duplicative, and wasteful. HHS should actively support HIT to improve quality in CHCs. This will maximize HIT benefits, minimize costs, and ensure that CHCs have the tools to address the needs of vulnerable populations. [*Health Affairs* 25, no. 2 (2006): 405–412; 10.1377/hlthaff.25.2.405]

Consensus is emerging that a national system of health information technology (HIT) is required to support an efficient and qualitative transformation of the U.S. health care system.[1] The U.S. Department of Health and Human Services (HHS) has established an Office of the National Coordinator for HIT (ONCHIT), whose mission is to promote widespread adoption of electronic health records (EHRs) and associated technologies.[2] Although there is broad agreement on this goal, there is considerable debate over the role of the federal government in achieving it.[3]

Here we make the case for an active federal role in bringing HIT to federally supported community health centers (CHCs) for the explicit purpose of quality improvement (QI). We argue for this based on CHCs' unique potential to address disparities, the special needs of CHCs, and the benefit to HHS and the country.

■ **The important role of CHCs.** CHCs are the core of the ambulatory care safety net for the most vulnerable U.S. populations.[4] More than 1,000 community, migrant, homeless, and public housing health centers in more than 3,600 sites deliver primary care to twelve million people. Roughly half of CHC patients are in rural medically

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DOI 10.1377/hlthaff.25.2.405

underserved areas; most of the remainder are in inner cities.[5] To receive federal support, CHCs must provide services to all patients in their communities, regardless of ability to pay.[6] Nearly 70 percent of CHC patients have family incomes at or below the federal poverty level, 39 percent are uninsured, 36 percent have Medicaid, and two-thirds are racial and ethnic minorities.[7]

Funding and HHS relationship. HHS is heavily invested in CHCs. In 2004, 43 percent of CHC funding was from grants and contracts, primarily from HHS through the Health Resources and Services Administration (HRSA) Bureau of Primary Health Care (BPHC), under Section 330 of the Public Health Service Act; and secondarily from the states.[8] Thirty-six percent of funding is from Medicaid; 6 percent is from Medicare; 6 percent is from other public insurance; and another 6 percent is from private insurance.[9] In 2001 the federal government introduced a prospective payment system (PPS) for Medicaid, which further reduced CHCs' revenue.[10] Given their disproportionate dependence on federal and state funding, CHCs are uniquely vulnerable to governmental cutbacks, and many have teetered on the verge of fiscal insolvency.[11]

CHCs' accountability. CHCs are truly community-based organizations, governed by community boards, the majority of whose members must be CHC patients. Yet they are also directly accountable to the BPHC for federal grant support. To qualify for continuing funding, CHCs must demonstrate through BPHC reporting that they are assessing and addressing health care needs in their communities that otherwise would go unmet. Despite ongoing fiscal and provider-staffing challenges, CHCs have consistently delivered health care at comparable or better quality and lower cost than other providers, without racial or socioeconomic disparities among their patients.[12] But comparable quality is not sufficient when the national performance is so low.[13] Adequate HIT, practice redesign, and novel reimbursement are needed to transform the quality of care provided to all U.S. patients.[14]

The Case For Active HHS Support

■ **Vulnerable populations.** Transformation of quality of care for low-income and minority populations is an important means for eliminating disparities in health and health care. The federal government recognizes CHCs' role in addressing disparities and has increased funding for expansion of the centers.[15] Moreover, the BPHC sponsors a national QI initiative, Health Disparities Collaboratives (HDCs), in roughly half of all CHCs.[16] HDCs are a series of partnerships, each of roughly 150 CHCs, in which CHC teams participate in joint learning sessions devoted to implementation of QI using adaptations of the chronic care model. The BPHC provides registry software for HDCs. A patient registry is a database tailored to capture, manage, and provide data on patients with specific conditions—data that are necessary to provide organized, population-based chronic and preventive care.[17] HDCs have stimulated appreciable improvements in quality among participating CHCs.[18]

Unfortunately, the absence of EHRs linked to registries threatens the sustain-

ability of QI among HDCs. Few CHCs possess EHRs.[19] Also, BPHC registries do not interface well with most existing EHRs, requiring labor-intensive manual entry. HDC participants cite the absence of EHRs as a major barrier to full implementation of the chronic care model.[20] To date, BPHC efforts to promote HIT within CHCs have been largely limited to (1) the creation of a Web-based EHR resource that lists functional requirements of EHRs for CHCs, (2) responses from large vendors, and (3) funding pilots in two CHC networks.[21] Although the BPHC recognizes the importance of promoting HIT in CHCs, more direct involvement and funding are needed.

Well-designed EHRs alone do not ensure quality. Rather, they represent the infrastructure needed to implement practice redesign.[22] By linking assistance in selecting, acquiring, and implementing EHRs to QI, HHS has an unparalleled opportunity to transform the health care provided by CHCs. Such a vision is not farfetched. The Veterans Health Administration (VHA) has dramatically transformed its health system for its socioeconomically disadvantaged and racially diverse patient population through QI and a well-designed EHR known as the Veterans Integrated Software Technology Architecture (VistA).[23] The Department of Defense is implementing an adaptation of VistA; the ambulatory version will be in place by 2007.[24] And the Indian Health Service, which also serves a largely uninsured and low-income population, has implemented a modified version of VistA in thirty-six sites.[25] Clearly, the challenge of linking HIT to QI in federally subsidized, community-operated CHCs is much greater than within closed, federally operated systems. Nonetheless, this challenge is fully congruent with ONCHIT's mission of achieving HIT within all of health care and with the Healthy People 2010 goal of eliminating disparities in health within a decade.

■ **Reasons for slow HIT diffusion.** *Cost.* The first reason for slow diffusion is cost. Start-up expenses for EHRs in small practices average $44,000 per full-time provider. However, these cost estimates do not account for providers' working longer hours during the implementation phase.[26] Charting time could increase by 50 percent during early phases, which would mean that fewer patients could be seen per hour.[27] Salaried physicians working in busy CHCs might not be able or willing to work additional hours. Thus, initial start-up costs could be closer to $64,000 per provider.[28]

EHRs incur additional ongoing costs for licensing, updates, and support—roughly $8,500 per provider per year.[29] Given limited access to capital, these costs are out of reach for many CHCs.

Complex selection process. Second, the process of selecting an EHR that is appropriate for the needs of a practice is complex, costly, and labor-intensive.[30] CHCs, particularly those that are small or midsize, often lack the time, staff, and technical expertise necessary to conduct an exhaustive search for the appropriate EHR.[31] Yet selection of the appropriate EHR is critical to its success.[32] Selection of the wrong system or inadequate integration into the workflow can be disastrous.[33]

Seamless interface between EHRs and registries is essential for QI and practice redesign.[34] Many smaller practices, including CHCs, lack the technical expertise required for each of these steps.

Misaligned costs and benefits. Third, the largest savings from acquiring and maintaining EHRs accrue to payers, not to the practices that purchase them.[35] Half of the savings for practices are derived from upcoding in office visits.[36] Other cost savings come from reduction in staff costs related to transcription and chart filing.[37] Given that only 12 percent of CHC revenue is derived from either private insurance or Medicare, CHCs will gain relatively little from an estimated 15 percent improvement in diagnostic upcoding.[38] The largest savings result from reductions in adverse medication events; duplicative pharmacy, laboratory, and radiology use; and avoidable hospitalizations.[39] However, with the exception of the few remaining CHCs participating in capitation, these savings primarily accrue to HHS.[40] Thus, compared with most practices, CHCs will realize relatively little return on their HIT investments.

Time-consuming implementation. To have an effect on health care quality, EHRs must be integrated into workflow redesign.[41] If center staff are not adequately prepared and retrained for this and patient scheduling is not adjusted, provider and staff satisfaction can quickly erode. Given high provider turnover, CHCs can ill afford such dissatisfaction.[42]

■ **Benefits to HHS.** The potential benefits to HHS include reduced costs, improved BPHC access to data on quality of care for vulnerable populations, and promotion of a national HIT infrastructure. The magnitude of these benefits will depend on whether HHS assumes an active role in promoting the diffusion of HIT in CHCs.

Reduction in costs. Most savings to HHS will be realized through reduction in Medicaid or Medicare payments to CHCs and to the hospitals and pharmacies that serve CHC patients.[43] States might similarly benefit through reduced spending for Medicaid and uninsured patients. Admittedly, the actual savings associated with HIT are debatable.[44] But these arguments miss the point for CHCs. Eventually, most CHCs will be forced to adopt HIT to compete in the market under pay-for-performance, largely using federal fee-for-service reimbursement to pay for it. Without HHS guidance and support, many of these HIT ventures will fail—at further expense to HHS. Thus, HHS will ultimately pay for EHRs for CHCs—either actively or passively. The critical question confronting HHS, then, is not whether to support HIT for CHCs, but when and how. If HHS is passive, the process will be slow, fragmented, disjointed, and full of false starts, with minimal impact on quality or costs. EHRs will be relegated to tools for upcoding visits and eliminating transcription and filing positions.[45] Alternatively, HHS can actively assist CHCs along each step of the process, minimizing waste and duplication of effort while ensuring health care transformation.

Better patient data. HHS will obtain better data on vulnerable CHC patients.

CHCs now report all data manually to the BHPC. Such data are often outdated by the time they are received and are of variable quality. Integration of HIT between CHCs nationally would allow the BPHC to compile real-time data on CHC patients, including services rendered, quality of care, and outcomes. Such public health informatics could inform national policy regarding the health and health care of vulnerable populations.

Equity in HIT diffusion. An active HHS role will ensure equity in HIT diffusion. HHS acknowledges that its HIT initiative could inadvertently widen the digital divide among providers, but it has yet to articulate a clear plan to address this threat.[46] An active HHS role also gives the department the opportunity to demonstrate that HIT can transform health care quality among community providers, not just in closed systems such as the VHA or Kaiser Permanante.[47] By supporting common HIT within a thousand CHCs, HHS will advance its agenda of achieving common standards and connectivity within the health care industry.

Implementation Steps

We propose that HHS take the following steps toward promotion of HIT in service of quality in CHCs.

■ **Establish a HRSA office for HIT coordination and assistance.** HHS should establish an office of HIT within HRSA that would operate in conjunction with ONCHIT but would be explicitly charged with ensuring equity in the diffusion of HIT through development and implementation of a strategic plan and budget. Potential functions would include remote and on-site technical assistance; promotion of appropriate, user-friendly EHRs; and consultation and assistance regarding practice redesign using HIT.

■ **Ensure common EHR features and functionality.** In approving EHRs for use by CHCs, HHS should make certain that EHR features and functionality are sufficiently similar among CHCs to allow for seamless connectivity and exchange of data between them (when patients relocate), easy aggregation of data by the BPHC across sites, learning between sites, and achievement of economies of scale for technical assistance and upgrades. Commonalities in EHRs provide greater impetus for hospitals, pharmacies, and laboratories to adopt standards that facilitate connectivity.

■ **Obtain contingency agreements from CHCs.** HHS assistance should be contingent on CHCs' commitment to undertaking the organizational changes necessary to improve health care quality. This means that HHS must work actively with CHCs to implement new models of care.[48] HDCs represent a potential organizational infrastructure for accomplishing this. They could assist CHCs in undertaking the organizational change and practice design necessary to leverage HIT in the service of QI. They could also provide technical assistance such as establishing interfaces between billing systems and EHRs or between EHRs and registries.

■ **Fund demonstration projects.** HHS should begin by funding demonstration

projects within CHCs across the country. These projects would be explicitly designed to assess the viability, costs, savings, workflow redesign, and technical assistance associated with implementing selected EHRs within CHCs. A sufficient sample of safety-net providers—probably fifty or more—will likely be needed to ensure adequate representation of the diversity of CHCs by region, size, HIT sophistication, and patient population. Funding should be enough to cover planning and implementation costs and to offset the temporary decrease in patient visits that initially occurs. Operational funding could be provided through either the Centers for Medicare and Medicaid Services (CMS) or HRSA. Whether HHS should promote adoption of a single EHR system by all CHCs should be carefully studied through pilot projects. VistA-Office, an ambulatory adaptation of VistA, should be included among EHRs evaluated, along with other promising EHRs for vulnerable populations.[49] It is available to practices through the CMS, but its appropriateness for CHCs or other small practices has not yet been evaluated. Quantitative and qualitative evaluation of all of these pilot projects could be conducted through requests for proposals from the Agency for Healthcare Research and Quality (AHRQ). Findings would inform HHS about the resources needed to ensure that all CHCs implement appropriate HIT in the service of QI.

■ **Provide start-up funding and reimbursement.** The steps require that Congress authorize the necessary funds. Once data from the demonstration projects become available, funding will be needed for all participating CHCs to plan for, select, acquire, and implement EHRs. Such funding might be provided as add-ons to CHCs' Section 330 funding and could be provided annually, contingent on satisfactory progress, until implementation was complete.

In addition, HHS should address ongoing reimbursement barriers to the implementation of new models of care in CHCs needed to improve quality. Current reimbursement incentives, including fee-for-service and the Medicaid PPS, are not well aligned with these models of care.[50]

THE PROSPECT OF EQUIPPING more than a thousand CHCs with HIT is daunting. However, expansion of CHCs must be accompanied by qualitative improvements in their care, to avoid fraying the national safety net and to ensure that CHCs possess the technology needed to fulfill their mission in the twenty-first century. Many developed countries have already invested heavily in nationwide HIT.[51] The United States is seeking to achieve national HIT diffusion through the free market, but this approach is unlikely to succeed with CHCs.[52] What is at stake is more than the technical aspects of HIT adoption by CHCs: It is the assurance of high-quality care and improved outcomes for the most vulnerable U.S. populations.

NOTES

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